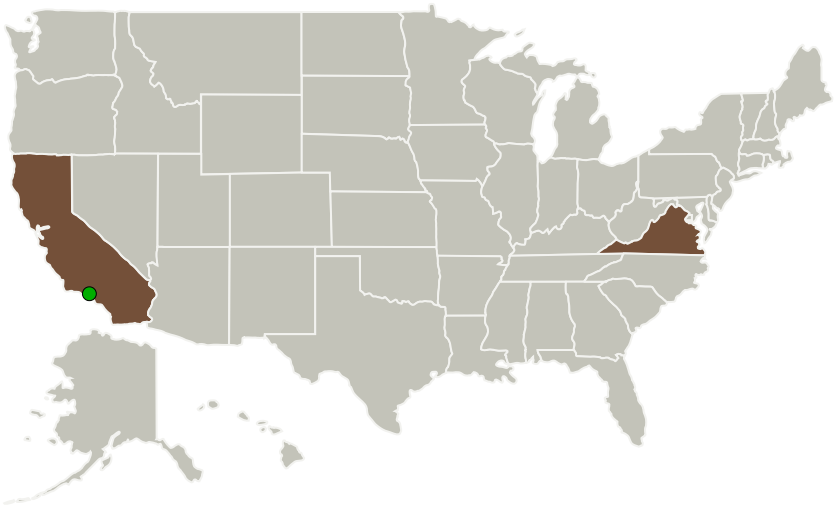
EDL Sensor Suite, Phase I

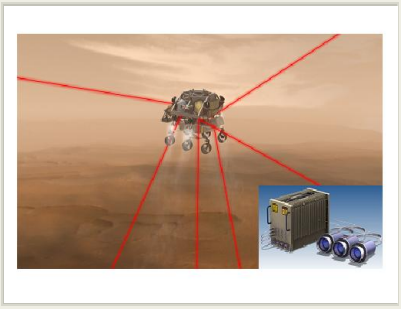
Completed Technology Project (2013 - 2013)

Project Introduction

Optical Air Data Systems (OADS) L.L.C. proposes a LIDAR based remote measurement sensor suite capable of satisfying a significant number of the desired sensing requirements in a compact, lightweight, and extremely power efficient form factor. OADS all-fiber optic LIDAR and Laser Doppler Velocimetry (LDV) technology is capable of measuring precise height above ground, ground speed, ground drift, range-gated relative winds, ambient temperature, as well as ambient pressure through the entire entry and descent phase of the spacecraft. Unlike other LIDAR solutions that would require imaging around or through the aeroshell, OADS patented LDV solutions can directly measure a range map of the terrain while simultaneously providing surface relative velocity information for navigation near the ground. OAD LDV solutions include a remote wind sensor capable of measuring wind information at multiple distances ahead of the spacecraft during the entry and descent phases. Once descent is complete, the sensor can be used on the ground to collect local environmental data (including surface winds) as advance information for the fetch rover, the planetary ascent vehicle, and for future missions.

Primary U.S. Work Locations and Key Partners





EDL Sensor Suite

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Organizations Performing Work	Role	Type	Location
Optical Air Data Systems, LLC	Lead Organization	Industry Women-Owned Small Business (WOSB)	Manassas, Virginia
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations	
California	Virginia

Project Transitions

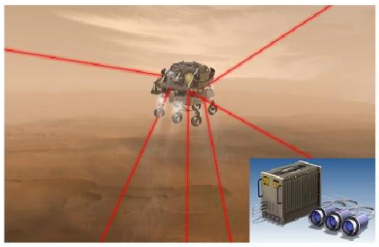
May 2013: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138113)*

Images



Project Image
EDL Sensor Suite
(https://techport.nasa.gov/image/130757)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Optical Air Data Systems, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

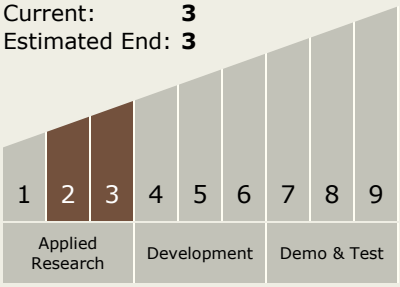
Carlos Torrez

Principal Investigator:

Elizabeth Dakin

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System